



Royal

Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph.: +91 281 2360695 ■ E-mail : royalsenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 21/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 03/04/2013 | 03/04/2013 | 03/04/2013 |
| 03. | Time of sampling | 0 | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 3 to 11 | 3 to 11 | 3 to 11 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 42 | 45 | 40 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 26 | 32 | 24 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.9 | 13.6 | 12.1 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 22.7 | 23.1 | 20.8 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 221 | 267 | 235 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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M. J. Analyst



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Ref. No. : 22/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 04/04/2013 | 04/04/2013 | 04/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 4 to12 | 4 to12 | 4 to12 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 45 | 47 | 42 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 28 | 31 | 26 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.5 | 13.2 | 12.2 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 22.3 | 23.0 | 21.2 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 229 | 279 | 242 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 23/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 10/04/2013 | 10/04/2013 | 10/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 2 to 10 | 2 to 10 | 2 to 10 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 49 | 52 | 42 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 32 | 38 | 28 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.2 | 13.9 | 11.7 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 21.5 | 22.3 | 20.3 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 239 | 250 | 218 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 24/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

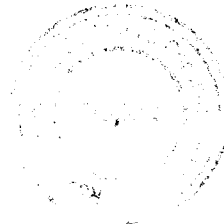
Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 11/04/2013 | 11/04/2013 | 11/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 3 to 12 | 3 to 12 | 3 to 12 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 47 | 54 | 43 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 31 | 36 | 25 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.9 | 13.5 | 12.2 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 21.9 | 22.7 | 21.1 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 225 | 244 | 219 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127. Gaseous Sampling Attachment
Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 25/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 17/04/2013 | 17/04/2013 | 17/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 5 to13 | 5 to13 | 5 to13 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 46 | 50 | 43 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 29 | 33 | 25 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.2 | 12.8 | 11.6 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 22.1 | 23.2 | 21.1 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 253 | 273 | 239 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment
Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 26/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 18/04/2013 | 18/04/2013 | 18/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 4 to 13 | 4 to 13 | 4 to 13 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 45 | 53 | 41 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 31 | 35 | 29 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.5 | 13.2 | 11.2 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 22.5 | 22.8 | 20.6 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 250 | 279 | 242 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 22/04/2013 2) 03/07/2013

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Ref. No. : 27/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--|-------------------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 24/04/2013 | 24/04/2013 | 24/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 4 to 10 | 4 to 10 | 4 to 10 |
| 07. | Average flow rate during sampling | m ³ /Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m³ | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m ³ | 48 | 56 | 43 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 30 | 34 | 24 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 12.1 | 13.6 | 11.5 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 21.1 | 22.5 | 20.6 |
| 17. | Permissible limit for CO ** | µg/m³ | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 239 | 263 | 223 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 20/04/2014 2) 03/07/2013

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Ref. No. : 28/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | NAAQMS - 1 | NAAQMS - 2 | NAAQMS - 3 |
|---------|--------------------------------------|--------------|---------------|------------------------|------------------------------|
| 01. | Location of Ambient | ---- | Main Gate (S) | Sinter Plant - 1 (NNW) | Nr. Workshop Spiral - II (W) |
| 02. | Date of sampling | ---- | 25/04/2013 | 25/04/2013 | 25/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 10.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 5 to 11 | 5 to 11 | 5 to 11 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 45 | 54 | 41 |
| 11. | Permissible limits for PM 2.5 | µg/m3 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m3 | 31 | 36 | 26 |
| 13. | Permissible limits for SO2 | µg/m3 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO2 | µg/m3 | 12.5 | 13.1 | 12.0 |
| 15. | Permissible limits for NO2 | µg/m3 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO2 | µg/m3 | 21.6 | 22.9 | 20.3 |
| 17. | Permissible limit for CO ** | µg/m3 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m3 | 230 | 248 | 216 |

Instrument Used: 1) Combo Sampler AAS 271 & Gaseous Sampling Attachment AAS 109

2) 2 Nos. Ecotach make Respirable Dust Sampler Model No. AAS 217 BL, PM 2.5 & PM 10 Sampler AAS 127, Gaseous Sampling Attachment

Calibration is due on: 1) 20/04/2014 2) 03/07/2013

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Ref. No. : 29/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | AAQM - 1 (S) | AAQM - 2 (SSW) | AAQM - 3 (WSW) | AAQM - 4 (NW) |
|---------|--|-------------------------|---|---------------------------|--------------------------------|---------------------------------|
| 01. | Location of Ambient | ---- | Old Colony (Nr. Environment Laboratory) | Nr. Rain Water Harvesting | LPG Yard (Nr. Water Reservoir) | Between Sinter - 2 & Spiral - 2 |
| 02. | Date of sampling | ---- | 03/04/2013 | 04/04/2013 | 05/04/2013 | 06/04/2013 |
| 03. | Time of sampling | ---- | 10.30 | 10.30 | 9.00 | 9.00 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 3 to 11 | 4 to 12 | 3 to 13 | 5 to 13 |
| 07. | Average flow rate during sampling | m ³ /Hr. | 1.0 | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m³ | 100 | 100 | 100 | 100 |
| 10. | Measured Concentration of PM 10 | µg/m ³ | 44 | 46 | 51 | 47 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 | 60 |
| 12. | Measured Concentration of PM 2.5 | µg/m ³ | 25 | 30 | 29 | 30 |
| 13. | Permissible limits for SO₂ | µg/m³ | 80 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO ₂ | µg/m ³ | 11.9 | 12.1 | 12.6 | 13.1 |
| 15. | Permissible limits for NO₂ | µg/m³ | 80 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO ₂ | µg/m ³ | 19.5 | 20.6 | 21.9 | 20.8 |
| 17. | Permissible limit for CO ** | µg/m³ | 2000 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of CO | µg/m ³ | 215 | 203 | 231 | 240 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,

All are Calibration due on: 23/04/2013

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M. K. J. Analyst



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Ref. No. : 30/04/2013-14

Date: 27/04/2013

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | AAQM - 5 (NE) | AAQM - 6 (SE) | AAQM - 7 (SSE) | AAQM - 8 (E) |
|---------|--|-------------------------|------------------|----------------------------------|-------------------|-----------------|
| 01. | Location of Ambient | ---- | Labour Colony | New Colony (Shopping Centre) | Admin Building | Weigh bridge |
| 02. | Date of sampling | ---- | 03/04/2013 | 04/04/2013 | 05/04/2013 | 06/04/2013 |
| 03. | Time of sampling | ---- | 11.00 | 11.05 | 9.35 | 9.35 |
| 04. | Duration of Sampling | Min. | 1440.00 | 1440.00 | 1440.00 | 1440.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 3 to 11 | 4 to 12 | 3 to 13 | 5 to 13 |
| 07. | Average flow rate during sampling | m ³ /Hr. | 1.0 | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m³ | 100 | 100 | 100 | 100 |
| 12. | Measured Concentration of PM 10 | µg/m ³ | 52 | 54 | 56 | 49 |
| 11. | Permissible limits for PM 2.5 | µg/m³ | 60 | 60 | 60 | 60 |
| 10. | Measured Concentration of PM 2.5 | µg/m ³ | 27 | 32 | 33 | 33 |
| 13. | Permissible limits for SO_x | µg/m³ | 80 | 80 | 80 | 80 |
| 14. | Measured Concentration of SO _x | µg/m ³ | 12.5 | 12.9 | 13.2 | 13.6 |
| 15. | Permissible limits for No_x | µg/m³ | 80 | 80 | 80 | 80 |
| 16. | Measured Concentration of NO _x | µg/m ³ | 20.1 | 21.2 | 22.2 | 20.1 |
| 17. | Permissible limit for CO ** | µg/m³ | 2000 | 2000 | 2000 | 2000 |
| 18. | Measured Concentration of | µg/m ³ | 222 | 216 | 243 | 255 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,

All are Calibration due on: 23/04/2013

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Ref. No. : 31/04/2013-14

Date: 27/04/2013

FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | A - 1 | A - 2 | A - 3 |
|---------|-------------------------------------|--------------|--------------------|-----------------|-----------------|
| 01. | Location of Ambient | ---- | RMH Junction House | RMH Stock House | Sinter RMH Yard |
| 02. | Date of sampling | ---- | 07/04/2013 | 07/04/2013 | 08/04/2013 |
| 03. | Time of sampling | ---- | 9.00 | 9.30 | 9.00 |
| 04. | Duration of Sampling | Hr. | 8.00 | 8.00 | 8.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 2 to 13 | 2 to 13 | 3 to 14 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 3000 | 3000 | 3000 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 2153 | 2445 | 1875 |
| 11. | Permissible limits for SO2 | µg/m3 | 150 | 150 | 150 |
| 12. | Measured Concentration of SO2 | µg/m3 | 12.2 | 13.5 | 11.6 |
| 13. | Permissible limits for NO2 | µg/m3 | 120 | 120 | 120 |
| 14. | Measured Concentration of NO2 | µg/m3 | 23.1 | 22.6 | 22.1 |
| 15. | Permissible limit for CO ** | µg/m3 | 5000 | 5000 | 5000 |
| 16. | Measured Concentration of CO | µg/m3 | 275 | 259 | 236 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411.

All are Calibration due on: 23/04/2013

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Ref. No. : 32/04/2013-14

Date: 27/04/2013

FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

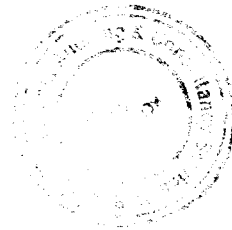
Test Method : As per IS Standards - 5182_2/4/6

| Sr. No. | Particulars | Unit | A - 4 | A - 5 | A - 6 |
|---------|------------------------------------|--------|------------------------|------------|----------------------|
| 01. | Location of Ambient | --- | Sinter 2 Ground Hopper | DISP | Sinter 1 Main to PMD |
| 02. | Date of sampling | --- | 08/04/2013 | 09/04/2013 | 09/04/2013 |
| 03. | Time of sampling | ---- | 9.35 | 9.00 | 9.35 |
| 04. | Duration of Sampling | Hr. | 8.00 | 8.00 | 8.00 |
| 05. | Dominant Wind Direction (From) | ---- | NW | NW | NW |
| 06. | Average Wind Speed | Km/Hr. | 3 to 14 | 5 to 12 | 5 to 12 |
| 07. | Average flow rate during sampling | m3/Hr. | 1.0 | 1.0 | 1.0 |
| 08. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 | 0.2 |
| 09. | Permissible limits for PM 10 | µg/m3 | 3000 | 3000 | 3000 |
| 10. | Measured Concentration of PM 10 | µg/m3 | 1063 | 1056 | 2235 |
| 11. | Permissible limits for SO2 | µg/m3 | 150 | 150 | 150 |
| 12. | Measured Concentration of SO2 | µg/m3 | 12.8 | 13.1 | 11.3 |
| 13. | Permissible limits for NO2 | µg/m3 | 120 | 120 | 120 |
| 14. | Measured Concentration of NO2 | µg/m3 | 22.7 | 22.3 | 21.6 |
| 15. | Permissible limit for CO ** | µg/m3 | 5000 | 5000 | 5000 |
| 16. | Measured Concentration of CO | µg/m3 | 229 | 219 | 245 |

Instrument used : 2 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit APM 411,

All are Calibration due on: 23/04/2013

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Ref. No. 33/04/2013-14

Date: 27/04/2013

Bag Filter Efficiency Report APCM Inlet

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 | Stack No. 6 |
|---------|--------------------------------|--------|---------------------|---------------------|------------------------------|------------------------|-----------------------------|---------------------|
| 01 | Date of Sampling | --- | 06/04/2013 | 06/04/2013 | Not Running During Visit | 06/04/2013 | Not Running During Visit | 06/04/2013 |
| 02 | Attached to | | Zinc Coating - I | Mg Converter - I | Core Cleaning & Dusting-I | Barrel Grinding - I | Barrel Grinding - II | Sand Reclamation |
| 03 | Stack Height | Meter | 30 | 30 | 30 | 30 | 30 | 32 |
| 04 | Stack Diameter | Meter | 0.488 | 0.584 | 0.588 | 0.584 | 0.584 | --- |
| 05 | Stack Temperature | °C | 47 | 46 | --- | 37 | --- | 40 |
| 06 | Ambient Temperature | °C | 32 | 33 | --- | 31 | --- | 33 |
| 07 | Average Velocity of Flue Gases | M/Sec. | 4.7 | 6.5 | --- | 11.2 | --- | 12.2 |
| 08 | Inlet | mg | 1578 | 1165 | --- | 1754 | --- | 1235 |
| 09 | Outlet | mg | 17 | 35 | 38 | 48 | --- | 50 |
| 10 | Efficiency | % | 98.92 | 97.00 | --- | 97.26 | --- | 95.95 |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 34/04/2013-14

Date: 27/04/2013

Bag Filter Efficiency Report APCM Inlet

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 7 | Stack No. 8 | Stack No. 9 | Stack No. 10 | Stack No. 11 | Stack No. 12 | Stack No. 13 |
|---------|--------------------------------|--------|----------------------|---------------------|----------------------------|----------------------|-------------------------------|------------------------|-----------------------------|
| 01 | Date of Sampling | --- | 07/04/2013 | 07/04/2013 | 07/04/2013 | 07/04/2013 | Not Running During Visit | 07/04/2013 | 07/04/2013 |
| 02 | Attached to | --- | Zinc Coating - II | Zinc Coating-III | Zinc Coating -IV & V | Mg Converter - II | Core Cleaning & Dusting-II | Barrel Grinding-III | Barrel Grinding-IV &V |
| 03 | Stack Height | Meter | 30 | 30 | 30 | 30 | 30 | 30 | 25 |
| 04 | Stack Diameter | Meter | --- | --- | --- | 0.488 | 0.588 | 0.584 | 0.488 |
| 05 | Stack Temperature | °C | 45 | 55 | 46 | 52 | --- | 44 | 43 |
| 06 | Ambient Temperature | °C | 33 | 31 | 32 | 34 | --- | 35 | 30 |
| 07 | Average Velocity of Flue Gases | M/Sec. | 9.9 | 10.8 | 12.2 | 5.6 | --- | 12.5 | 13.1 |
| 08 | Inlet | mg | 1546 | 1598 | 1465 | 1312 | --- | 1645 | 1723 |
| 09 | Outlet | mg | 14 | 16 | 15 | 32 | --- | 45 | 47 |
| 10 | Efficiency | % | 99.09 | 99.00 | 98.98 | 97.56 | --- | 97.26 | 97.27 |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 35/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Sinter Plant-I

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra. Dist. Kutch

Test Method : As per IS Standards - 11255 1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 | Stack No. 6 |
|---------|---|--------------------|-------------------|------------------|---|----------------------------------|-------------------------------|-----------------------------|
| 01 | Date of Sampling | --- | 02/04/2013 | 02/04/2013 | 02/04/2013 | 02/04/2013 | 02/04/2013 | 02/04/2013 |
| 02 | Time of sampling | --- | 9.35 | 10.20 | Not Running During Visit | 11.00 | 11.45 | 14.15 |
| 03 | Stack Attached to | --- | Sinter Furnace | Discharge End | Fuel & Flux Crusher and Screening | Fuel & Flux Crushing House | Secondary Mixture House | Primary Mixture House |
| 04 | Air Pollution Control Measures | --- | ESP | ESP | Bag Filter | Bag Filter | --- | --- |
| 05 | Stack Height | Meter | 50 | 32.8 | 32.8 | 27.05 | 36.08 | 19.75 |
| 06 | Stack Diameter | Meter | 2.0 | 1.30 | 1.40 | 0.70 | 1.25 | 1.25 |
| 07 | Stack Temperature | °C | 123 | 128 | --- | 58 | 51 | 76 |
| 08 | Ambient Temperature | °C | 30 | 30 | --- | 31 | 32 | 35 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 12.3 | 7.1 | --- | 5.2 | 5.9 | 5.7 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 17 | 22 | --- | 20 | 23 | 21 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | --- | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm ³ | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm ³ | 42 | 47 | --- | 46 | 39 | 44 |
| 14 | Permissible limits for SO ₂ | ppm | 100 | NA | NA | NA | NA | NA |
| 15 | Measured Concentration of SO ₂ | ppm | 12.5 | --- | --- | --- | --- | --- |
| 16 | Permissible limits for NO _x | ppm | 50 | NA | NA | NA | NA | NA |
| 17 | Measured Concentration of NO _x | ppm | 6.8 | --- | --- | --- | --- | --- |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 36/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Sinter Plant- II

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 | Stack No. 6 |
|---------|---|--------------------|----------------|----------------|-------------|--------------------------------|----------------------------------|---|
| 01 | Date of Sampling | --- | 03/04/2013 | 03/04/2013 | 03/04/2013 | 03/04/2013 | 03/04/2013 | 03/04/2013 |
| 02 | Time of sampling | Hr. | 12.00 | 14.45 | 15.30 | 16.15 | 17.00 | Not Running During Visit |
| 03 | Stack Attached to | --- | Sinter Furnace | Tail End Stack | Flux | Primary Mixer De-duster system | Secondary Mixer De-duster system | Fuel Screening deduster System (Screening Flux Stack) |
| 04 | Air Pollution Control Measures | --- | ESP | ESP | Bag Filter | --- | --- | Dust Collector |
| 05 | Stack Height | Meter | 50 | 50 | 30 | 30 | 30 | 30 |
| 06 | Stack Diameter | Meter | 2 | 1.3 | 0.7 | 1.25 | 1.25 | --- |
| 07 | Stack Temperature | °C | 133 | 152 | 46 | 51 | 48 | --- |
| 08 | Ambient Temperature | °C | 32 | 35 | 36 | 35 | 34 | --- |
| 09 | Average Velocity of Flue Gases | M/Sec. | 6.8 | 7.5 | 5.9 | 6.6 | 6.5 | --- |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 21 | 22 | 23 | 26 | 26 | --- |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | --- |
| 12 | Permissible limits for PM | mg/Nm ³ | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM | mg/Nm ³ | 37 | 40 | 44 | 39 | 42 | --- |
| 14 | Permissible limits for SO ₂ | ppm | 100 | NA | NA | NA | NA | NA |
| 15 | Measured Concentration of SO ₂ | ppm | 13.1 | --- | --- | --- | --- | --- |
| 16 | Permissible limits for NO _x | ppm | 50 | NA | NA | NA | NA | NA |
| 17 | Measured Concentration of NO _x | ppm | 16.7 | --- | --- | --- | --- | --- |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 37/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS

BLAST FURNCE & PCI

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

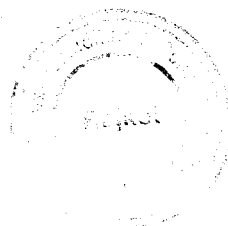
| Sr. No | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 |
|--------|---|--------------------|-------------|-------------|------------------|-------------|--------------------|
| 01 | Date of Sampling | --- | 04/04/2013 | 04/04/2013 | 04/04/2013 | 04/04/2013 | 04/04/2013 |
| 02 | Time of sampling | Hr. | 12.00 | 14.30 | 15.15 | 16.00 | 16.50 |
| 03 | Stack Attached to | --- | Boiler - I | Boiler - II | Dedusting System | Stove Stack | Coal Pulverization |
| 04 | Air Pollution Control Measures | --- | --- | --- | Bag Filter | --- | Bag Filter |
| 05 | Stack Height | Meter | 45 | 45 | 35.0 | 50.0 | 32.00 |
| 06 | Stack Diameter | Meter | 1.380 | 1.380 | 1.484 | 2.250 | --- |
| 07 | Stack Temperature | °C | 161 | 162 | 52 | 318 | 58 |
| 08 | Ambient Temperature | °C | 32 | 35 | 36 | 36 | 33 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 7.3 | 7.5 | 6.0 | 8.5 | 7.1 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 21 | 22 | 23 | 18 | 27 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm ³ | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm ³ | 5 | 7 | 38 | 5 | 48 |
| 14 | Permissible limits for SO ₂ | mg/Nm ³ | 40 | 40 | 40 | 40 | 100 (ppm) |
| 15 | Measured Concentration of SO ₂ | mg/Nm ³ | 5.5 | 6.7 | N.D. | N.D. | 1.3 (ppm) |
| 16 | Permissible limits for NO _x | mg/Nm ³ | 25 | 25 | 25 | 25 | 50 (ppm) |
| 17 | Measured Concentration of Nox | mg/Nm ³ | 7.4 | 7.6 | 6.7 | 5.5 | 0.9(ppm) |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 38/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Captive Power Plant

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 6 | Stack No. 7 | Stack No. 8 | Stack No. 9 |
|---------|--|--------------------------|----------------------|----------------------|----------------------|----------------------|
| 01 | Date of Sampling | --- | Not Running | 04/04/2013 | Not Running | Not Running |
| 02 | Time of sampling | Hr. | During Visit | 17.30 | During Visit | During Visit |
| 03 | Stack Attached to | --- | 6000 KVA D.G. | 3240 KVA D.G. | 3240 KVA D.G. | 1180 KVA D.G. |
| 04 | Air Pollution Control Measures | --- | --- | --- | --- | --- |
| 05 | Stack Height | Meter | 57.0 | 35 | 35 | 35 |
| 06 | Stack Diameter | Meter | 1.984 | 1.484 | 1.484 | 0.980 |
| 07 | Stack Temperature | °C | --- | 122 | --- | --- |
| 08 | Ambient Temperature | °C | --- | 31 | --- | --- |
| 09 | Average Velocity of Flue Gases | M/Sec. | --- | 7.5 | --- | --- |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | --- | 24 | --- | --- |
| 11 | Gaseous Sampling Flow Rate | LPM | --- | 2.00 | --- | --- |
| 12 | Permissible limits for PM | mg/Nm³ | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm ³ | --- | 36 | --- | --- |
| 14 | Permissible limits for SO₂ | ppm | 100 | 100 | 100 | 100 |
| 15 | Measured Concentration of SO ₂ | ppm | --- | 17.2 | --- | --- |
| 16 | Permissible limits for Nox | ppm | 50 | 50 | 50 | 50 |
| 17 | Measured Concentration of Nox | ppm | --- | 13.5 | --- | --- |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Recalibration is Due on : 20/04/2014

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Ref No 39/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS

Pipe Complex

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 1 | Stack No. 2 | Stack No. 3 | Stack No. 4 | Stack No. 5 | Stack No. 6 | Stack No. 7 |
|---------|--|--------|---------------------------------|---------------------------------|---------------------------------|-----------------------------|-----------------------------|------------------------|-----------------------------|
| 01 | Date of Sampling | --- | 05/04/2013 | 05/04/2013 | 05/04/2013 | 05/04/2013 | 05/04/2013 | 05/04/2013 | 05/04/2013 |
| 02 | Time of sampling | Hr. | Not Running During Visit | Not Running During Visit | Not Running During Visit | Not Running During Visit | 10.15 | 11.00 | Not Running During Visit |
| 03 | Stack Attached to | --- | Shot Blasing (Coating Plant) | Shot Blasing (Coating Plant) | Shot Blasing (Coating Plant) | Bitumin Drying Oven - I | Bitumin Drying Oven - II | Barrel Grinding - I | Barrel Grinding - II |
| 04 | Air Pollution Control Measures | --- | Bag Filter | Bag Filter | Bag Filter | --- | --- | Bag Filter | Bag Filter |
| 05 | Stack Height | Meter | 10.0 | 10.0 | 10.0 | 32.8 | 32.8 | 30 | 30 |
| 06 | Stack Diameter | Meter | 0.41 | 0.41 | 1.125 | 1.375 | 1.375 | 0.584 | 0.584 |
| 07 | Stack Temperature | °C | --- | --- | --- | --- | 140 | 37 | --- |
| 08 | Ambient Temperature | °C | --- | --- | --- | --- | 30 | 31 | --- |
| 09 | Average Velocity of Flue Gases | M/Sec. | --- | --- | --- | --- | 7.7 | 15.5 | --- |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | --- | --- | --- | --- | 24 | 11.2 | --- |
| 11 | Gaseous Sampling Flow Rate | LPM | --- | --- | --- | --- | 2.0 | 2.0 | --- |
| 12 | Permissible limits for PM | mg/Nm3 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM. | mg/Nm3 | --- | --- | --- | --- | 38 | 48 | --- |
| 14 | Permissible limits for SO2 | mg/Nm3 | 40 | 40 | 40 | 100 (ppm) | 100 (ppm) | 40 | 40 |
| 15 | Measured Concentration of SO2 | mg/Nm3 | --- | --- | --- | --- | 7.5 | 2.8 | --- |
| 16 | Permissible limits for Nox | mg/Nm3 | 25 | 25 | 25 | 50 (ppm) | 50 (ppm) | 25 | 25 |
| 17 | Measured Concentration of Nox | mg/Nm3 | --- | --- | --- | --- | 9.1 | 4.9 | --- |

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 40/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Pipe Copmplex

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 8 | Stack No. 9 | Stack No. 10 | Stack No. 11 | Stack No. 12 | Stack No. 13 |
|---------|--|--------|------------------------------|-------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 01 | Date of Sampling | --- | 06/04/2013 | 06/04/2013 | 06/04/2013 | 06/04/2013 | 06/04/2013 | 06/04/2013 |
| 02 | Time of sampling | Hr. | 10.10 | 11.00 | 11.50 | 16.30 | 15.50 | 15.00 |
| 03 | Stack Attached to | --- | Mg Converter- I&II common | Mg Converter -III | Zn Coating - I | Zn Coating - II | Zn Coating - III | Zn Coating - IV & V |
| 04 | Air Pollution Control Measures | --- | Bag Filter | Bag Filter | Cyclone Seprater & Bag Filter | Cyclone Seprater & Bag Filter | Cyclone Seprater & Bag Filter | Cyclone Seprater & Bag Filter |
| 05 | Stack Height | Meter | 30 | 30 | 30 | 30 | 30 | 30 |
| 06 | Stack Diameter | Meter | 0.488 | 0.488 | 0.584 | 0.584 | 0.584 | 0.850 |
| 07 | Stack Temperature | °C | 57 | 52 | 48 | 49 | 43 | 48 |
| 08 | Ambient Temperature | °C | 30 | 31 | 33 | 35 | 36 | 36 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 7.9 | 5.8 | 6.2 | 7.5 | 8.1 | 12.1 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 13 | 10 | 11 | 13 | 14 | 22 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm3 | 150 | 150 | 20 (Zn) | 20 (Zn) | 20 (Zn) | 20 (Zn) |
| 13 | Measured Concentration of PM | mg/Nm3 | 35 | 32 | 17(Zn) | 15 (Zn) | 14(Zn) | 13 (Zn) |
| 14 | Permissible limits for SO2 | mg/Nm3 | 40 | 40 | NA | NA | NA | NA |
| 15 | Measured Concentration of SO2 | mg/Nm3 | N.D. | N.D. | --- | --- | --- | --- |
| 16 | Permissible limits for Nox | mg/Nm3 | 25 | 25 | NA | NA | NA | NA |
| 17 | Measured Concentration of Nox | mg/Nm3 | 4.5 | 3.1 | --- | --- | --- | --- |

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N.D= Not Detectable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 41/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Pipe Complex

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 14 | Stack No. 15 | Stack No. 16 | Stack No. 17 | Stack No. 18 | Stack No. 19 |
|---------|---|--------------------|------------------------------|-------------------------------|--------------|-----------------------------|---------------|--------------|
| 01 | Date of Sampling | --- | 07/04/2013 | 07/04/2013 | 07/04/2013 | 07/04/2013 | 07/04/2013 | 07/04/2013 |
| 02 | Time of sampling | Hr. | Not Running During Visit | Not Running During Visit | 11.00 | Not Running During Visit | 15.00 | 12.00 |
| 03 | Stack Attached to | --- | Core Cleaning & Dusting-I | Core Cleaning & Dusting-II | Core Shop-I | Core Shop-II | Core Shop-III | Core Shop-IV |
| 04 | Air Pollution Control Measures | --- | Bag Filter | Bag Filter | --- | --- | --- | --- |
| 05 | Stack Height | Meter | 30 | 30 | 30 | 30 | 30 | 30 |
| 06 | Stack Diameter | Meter | 0.588 | 0.59 | 0.584 | 0.584 | 0.584 | 0.584 |
| 07 | Stack Temperature | °C | --- | --- | 42 | --- | 45 | 47 |
| 08 | Ambient Temperature | °C | --- | --- | 30 | --- | 35 | 32 |
| 09 | Average Velocity of Flue Gases | M/Sec. | --- | --- | 10.8 | --- | 14.8 | 12.5 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | --- | --- | 19 | --- | 10 | 9 |
| 11 | Gaseous Sampling Flow Rate | LPM | --- | --- | 2.0 | --- | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm ³ | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM | mg/Nm ³ | --- | --- | 32 | --- | 34 | 33 |
| 14 | Permissible limits for SO ₂ | mg/Nm ³ | 40 | 40 | 40 | 40 | 40 | 40 |
| 15 | Measured Concentration of SO ₂ | mg/Nm ³ | --- | --- | N.D. | --- | 3.7 | 3.2 |
| 16 | Permissible limits for Nox | mg/Nm ³ | 25 | 25 | 25 | 25 | 25 | 25 |
| 17 | Measured Concentration of Nox | mg/Nm ³ | --- | --- | 3.1 | --- | 4.2 | 3.7 |

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

N.D.= Not Detectable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 42/04/2013-14

Date: 27/04/2013

STACK EMISSION MONITORING RESULTS Pipe Complex

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

| Sr. No. | Particulars | Unit | Stack No. 20 | Stack No. 21 | Stack No. 22 | Stack No. 23 | Stack No. 24 | Stack No. 25 |
|---------|--|--------|-----------------------|-----------------------|------------------------|---------------------|-----------------------|------------------|
| 01 | Date of Sampling | --- | 07/04/2013 | 07/04/2013 | 07/04/2013 | 07/04/2013 | 08/04/2013 | 08/04/2013 |
| 02 | Time of sampling | Hr. | 15.15 | 15.45 | 16.30 | 17.20 | 10.30 | 11.20 |
| 03 | Stack Attached to | --- | Annealing Furnace - I | Annealing Furnace - I | Annealing Furnace - II | Barrel Grinding-III | Barrel Grinding -IV&V | Sand Reclamation |
| 04 | Air Pollution Control Measures | --- | --- | --- | --- | Bag Filter | Bag Filter | Bag Filter |
| 05 | Stack Height | Meter | 32 | 32 | 32 | 30 | 25 | 32 |
| 06 | Stack Diameter | Meter | 1.375 | 1.375 | 1.375 | --- | 0.488 | --- |
| 07 | Stack Temperature | °C | 143 | 142 | 167 | 45 | 43 | 38 |
| 08 | Ambient Temperature | °C | 36 | 36 | 35 | 34 | 30 | 32 |
| 09 | Average Velocity of Flue Gases | M/Sec. | 6.8 | 6.8 | 6.5 | 11.3 | 13.2 | 12.7 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 21 | 21 | 19 | 20 | 9 | 23 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible limits for PM | mg/Nm3 | 150 | 150 | 150 | 150 | 150 | 150 |
| 13 | Measured Concentration of PM | mg/Nm3 | 29 | 32 | 32 | 45 | 47 | 50 |
| 14 | Permissible limits for SO2 | mg/Nm3 | 100 (PPM) | 100 (PPM) | 100 (ppm) | 40 | 40 | 40 |
| 15 | Measured Concentration of SO2 | mg/Nm3 | 3.6(PPM) | 3.8(PPM) | 3.4(PPM) | 1.5 | 2.3 | N.D. |
| 16 | Permissible limits for Nox | mg/Nm3 | 50 (PPM) | 50 (PPM) | 50 (PPM) | 25 | 25 | 25 |
| 17 | Measured Concentration of Nox | mg/Nm3 | 4.3 (PPM) | 4.8 (PPM) | 5.5 (PPM) | 4.3 | 5.7 | N.D. |

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N.D= Not Detectable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Both Stack kit Recalibration is Due on : 21/04/2013

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Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

- 1 Name of the Department/Plant : Sinter, BF, DISP, JCO & Coating Units at Jindal Saw Limited, Samaghogha.
- 2 Raw materials, by products and finished products involved in the process. TOTAL DUST
- 3 Particulars of sampling

Date of Sampling : 8th & 9th April, 2013

| No | Location Operation monitored | Identified Contaminate | Sampling Instrument used | Airborne Contamination | | | TWA concentration (As given in Second Schedule) | Refrance Method | Number of workers exposed at the location being monitored | Remark | Signature person taking samples | Name (in block letters) |
|----|-------------------------------|------------------------|--|------------------------|---------|---------|---|-----------------|---|--------|---------------------------------|-------------------------|
| | | | | Number of sample | Range | Average | mg/m3 | | | | | |
| 1 | Spiral Plant Nr. ID/OD | Total Dust | Personal Respirable Dust sampler APM 800 | 02 | 4-5 | 4.5 | 10 | Gravimetric | 8 | --- | <i>Manoj</i> | Mr. Manoj Sonrat |
| 2 | JCO Plant Nr. JCO Press | Total Dust | | 02 | 2-4 | 3.0 | 10 | Gravimetric | 6 | --- | | |
| 3 | Sinter Plant At First Floor | Total Dust | | 02 | 3-4 | 3.5 | 10 | Gravimetric | 5 | --- | | |
| 4 | BF Plant (Cast House) | CO | | 02 | 0.2-0.4 | 0.3 | 2 | Gravimetric | 9 | --- | | |
| | | Total Dust | | | 2-4 | 3 | 10 | | | | | |
| 5 | Coating Plant (Blasting Area) | Total Dust | | 02 | 4-5 | 4.5 | 10 | Gravimetric | 4 | --- | | |
| 6 | DISP Plant Main Entrance | Total Dust | 02 | 3-5 | 4.0 | 10 | Gravimetric | 10 | --- | | | |

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 11/12/2013

For. Royal Environment Auditing & Consultancy Service


 Authorized Sign



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Ref. No. : 45/04/2013-14

Date: 27/04/2013

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of Sampling : 8th & 9th April, 2013

| Sr. No. | Location of Sampling | Results in dB(A) (Day Time) | Results in dB(A) (Night Time) |
|---------|---------------------------|--------------------------------|----------------------------------|
| | Permissible Limits | 75.0 | 70.0 |
| 01. | Nr. Admin. Building | 67.5 | 65.7 |
| 02. | Nr. Old Colony | 67.7 | 65.9 |
| 03. | Nr. LPG Yard | 68.9 | 66.3 |
| 04. | Nr. Sinter Plant | 70.2 | 67.8 |
| 05. | Nr. R. O. Plant | 68.1 | 66.3 |
| 06. | Nr. Gate No. 2 | 66.1 | 65.2 |
| 07. | Nr. New Colony | 70.5 | 67.9 |

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 05/10/2013

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Ref. No. : 44/04/2013-14

Date: 27/04/2013

WORK ZONE NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of Sampling : 8th & 9th April, 2013

| Sr. No. | Location of Sampling | Results Avg. in dB(A) |
|---------|--|-----------------------|
| 01. | Inside Control Room of Sinter Plant | 66.8 |
| 02. | Nr. Stock House of BF | 68.1 |
| 03. | Inside Control Room of BF | 65.9 |
| 04. | Inside Control Room of Blower House | 71.3 |
| 05. | Inside Control of Cast House | 66.5 |
| 06. | Inside Control Room of CPP | 66.8 |
| 07. | Inside Control Room of Annealing Furnace of DISP | 67.3 |
| 08. | Inside Laboratory of BF | 64.8 |
| 09. | Inside Laboratory of DISP | 66.9 |
| 10. | Inside ID & OD Control Room of JCO Plant | 67.5 |
| 11. | Inside Control Room – Mill area of Spiral Plant | 72.3 |
| 12. | Inside Spiral – 1 | 71.5 |
| 13. | Nr. Pipe cutting Area of Spiral Plant | 70.5 |
| 14. | Inside JCO Plant | 69.7 |
| 15. | Nr. JCO Press | 71.2 |
| 16. | Inside DISP Plant | 71.5 |
| 17. | Inside Coating Plant | 68.5 |

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is due on : 05/10/2013

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Ref. No. : 46/04/2013-14

Date: 27/04/2013

WATER SAMPLE ANALYSIS REPORT

Name of company : Jindal Saw Limited.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of Sample Collection : 09/04/2013

Source of Sample : Borewell Water Sample From Nr, Mess

| Sr. No. | Parameters | Unit | Acceptable Limit(*) | Permissible Limits(*) | Results |
|---------|-------------------|-------------|---------------------|-----------------------|------------|
| 01. | Colour | Pt.Co.Scale | 5 | 15 | Colourless |
| 02. | Odour | -- | Agreable | Agreable | Odourless |
| 03. | pH | pH Unit | 6.5 to 8.5 | No Relaxation | 7.53 |
| 04. | T.D.S. | mg/l | 500 | 2000 | 1362 |
| 05. | Total Hardness | mg/l | 200 | 600 | 448 |
| 06. | Turbidity | NTU | 1 | 5 | 1.3 |
| 07. | Chloride | mg/l | 250 | 1000 | 532 |
| 08. | Alkalinity | mg/l | 200 | 600 | 250 |
| 09. | Phenolic Compound | mg/l | 0.001 | 0.002 | NIL |
| 10. | Residual Chlorine | mg/l | 0.2 | 1.0 | NIL |
| 11. | Fluoride | mg/l | 1.0 | 1.5 | 0.38 |
| 12. | Ca as Ca | mg/l | 75 | 200 | 176 |
| 13. | Mg as Mg | mg/l | 30 | 100 | 149 |
| 14. | Copper | mg/l | 0.05 | 1.5 | NIL |
| 15. | Iron | mg/l | 0.3 | No Relaxation | 0.22 |
| 16. | Manganese | mg/l | 0.1 | 0.3 | 0.15 |
| 17. | Sulphate | mg/l | 200 | 400 | 0.42 |
| 18. | Nitrate | mg/l | 45 | No Relaxation | 12 |

(*) Acceptable Limit & Permissible Limits as per IS 10500 : 2012, Drinking Water Specification

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Ref. No. : 47/04/2013-14

Date: 27/04/2013

REPORT OF DOMESTIC WASTEWATER ANALYSIS

Name of company : Jindal Saw Limited.

Village: Samaghogha.

Tal. : Mundra, Dist. Kutch

Source Of Sample Collection : Domestic Effluent After Treatment

Date of Sample Collection : 09/04/2013

| Sr. No. | Parameters | Unit | GPCB limits | STP Inlet | STP Outlet |
|---------|----------------------|---------|-------------|-----------|------------|
| 01. | pH | pH Unit | ---- | 7.85 | 7.29 |
| 02. | BOD (3 Days at 27°C) | mg/l | <20 | 185 | 16 |
| 03. | Suspended Solids | mg/l | <30 | 88 | 17 |
| 04. | Residual Chlorine | mg/l | Min. 0.5 | ---- | 0.58 |

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